

Commonwealth of Kentucky
Division for Air Quality
PERMIT STATEMENT OF BASIS

Title V (draft permit) No. V-99-002

GENERAL SHALE PRODUCTS LLC

CORBIN, KY.

May 10, 2000

CHRISTY RICE, REVIEWER

Plant I.D. # 101-4040-0022

Application Log # F423

SOURCE DESCRIPTION:

General Shale Brick operates a face brick manufacturing plant (Plant #33) adjacent to State Highway 26, 2½ miles south of Corbin at Woodbine, Kentucky. Initial processing of the raw material, consisting of a combination of clay and shale, takes place in a large building housing a primary crusher, secondary crusher, 2 grinders, 6 screens, and associated conveyors. After grinding, the raw material is mixed with sand and water and formed into bricks by the extrusion process. The bricks are then dried and fired in two natural gas fueled tunnel dryer/kilns. 'Kiln A' was installed in 1972 and modified to burn coal in 1982. 'Kiln B' was installed in 1986. Coal is no longer used as fuel for either kiln.

COMMENTS:

Regulation 401 KAR 63:010, Fugitive emissions, is applicable to the unpaved haul road and to the raw material handling equipment installed in 1972. The secondary crusher and conveyor added in 1993 are subject to Regulation 401 KAR 59:310, New nonmetallic mineral processing plants. Both kilns are subject to Regulation 401 KAR 59:010, New process operations, with respect to particulate emissions.

Control of fugitive particulate emissions from raw material handling is accomplished by enclosure of equipment in a large building. An efficiency of ninety percent is assumed for this type of control. Application of water to the haul road effects an estimated seventy percent reduction in fugitive emissions. No controls exist for the two dryer/kilns.

A stack test was performed on October 2, 1998 at the request of the Division to determine applicability of Regulation 401 KAR 59:105, New process gas streams, to the two tunnel kilns. Calculations based on the stack test emission rate and 8760 hours of operation indicate that potential emissions of sulfur dioxide would exceed 100 tons per year, making the two kilns subject to Regulation 401 KAR 59:105, Section 4. Even though stack test results show that the kilns do comply with the sulfur dioxide concentration standard of 250 ppm, General Shale Products has requested that an operational limitation be placed on annual production from the two kilns in order to preclude applicability of the process gas stream regulation. Therefore, total annual production of bricks from both kilns will be limited to 180,000 tons for any consecutive twelve month period. At this rate of production, sulfur dioxide emissions would total just over 95 tons per year, thus exempting both kilns from Regulation 401 KAR 59:105.

Hydrogen fluoride emissions from the two tunnel kilns exceed the major source threshold of 10 tons per year for any hazardous air pollutant (HAP). Section 112 of the Clean Air Act requires that the EPA promulgate regulations establishing emission standards for each category of major sources of HAPs. The standards must require the maximum degree of emission reduction that the EPA determines to be achievable by each particular source category. Promulgation of the maximum achievable control technology (MACT) standard for the Clay Products Manufacturing source category is scheduled for November, 2000. MACT standards must include compliance dates for existing sources no later than 3 years after promulgation. The EPA or the Division may grant individual sources a 1-year extension if necessary for the installation of controls.

Sulfur dioxide and hydrogen fluoride emission factors were calculated from stack test results. An emission factor for the haul road was calculated based on its length and surface characteristics. All other emission factors were taken from AP-42 Section 11.3, Brick and Structural Clay Product Manufacturing (8/97).

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.